ACCESSION NR: AP4039272

5/0148/64/000/005/0040/0045

AUTHOR: Vvedenskiy, V. S.; Rubenchik, Yu. I.; Semenchenko, G. V.; Kryakovskiy, Yu. V.; Yavoyskiy, V. I.

TITLE: Improvement of deoxidation methods during the finishing of "10Kh15N25M6" and "40KhNMA" steel

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1964, 40 45

TOPIC TAGS: rare earth metal, stainless steel, structural steel, austenitic carbide steel, low plasticity, hot working, calcium silicon additive, deformation, nonmetallic inclusion, ferrocerium, grain coarsening

ABSTRACT: The authors investigated the effect of rare earth metals on the quality of stainless and structural steel. Austenitic carbide steel "10Kh16N25M6" served as a specimen. The low plasticity of this steel after hot working was studied in cast and forged pieces. Calcium silicon powder and lumps were added to the melt. Deformed and non-deformed specimens ruptured after forging and 180 C bending. Chromite inclusions were identified in all specimens. In cast and rolled specimens 0.2% ferrocerium enhanced plasticity while mechanical properties

Card 1/2

ACCESSION NR: AP4039272

remained unchanged. The carbide phase was more uniformly distributed. In "40KhNMA" structural steel 1 kg/t ferrocerium and calcium silicon added during the finishing period to an 18 ton electric furnace prevented hairline cracking. The authors assume that deoxidation during the finishing stage changes the physical properties of non-metallic inclusions. A coarsening of the natural grain of up to 4 ASTM is indicative of a higher purity along grain boundaries. Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: Moskovskiy institut stali i splavov i Izhevskiy metallurgicheskiy zavod (Moscov Instituts of Steel and Alloys and Izhevsk Metallurgical Plant)

SURMITTED: 30Dec63

ENCL: 00

SUB CODE: MM

NO REF SOV: 002

OTHER: OOO

RUBENCHIK, Yu.I.; KRYAKOVSKIY, Yu.V.; YAVOYSKIY, V.I.; KULIKOVA, M.N.

Nature of nonmetallic inclusions of rare-earth elements in iron and steel. Zav. lab. 30 no.1:57-58 '64. (MI.A 17:9)

1. Moskovskiy institut stali i splavov.

PERMYAKOV, L.H. (Moskva); KRYAKOVSKIY, Yu.V. (Moskva); VISHKAREV, A.F. (Moskva); YAVOYSKIY, V.I. (Moskva)

Effect of rare-earth metals on the behavior of nitrogen in liquid iron and steel. Izv. AN SSSR. Met. 1 gor. delo no.4:68-75 Jl-Ag *64. (MIRA 17:9)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826820007-8"

NIKOLAYEV, Ye.I.; KRYAKOVSKIY, Yu.V.; TYURIN, Ye.I.; YAVOYSKIY, V.I.

Chemical heterogeneity and nonmetallic inclusions in ingots of steel with rare-earth metals. Izv. vys. ucheb. zav.; chern. met. 8 no.7:37-42 '65. (MIRA 18:7)

1. Moskovskiy institut stali splavov.

BRITAKOVA, A.F.; PAISOV, I.V.; KRIAKOVOKIY, V. V., TATARINTSEY, V. In.

Grain boundaries in etructural steel with and without additions of rare earth metals. Izv. vys. usheb. zav., therm. wet. 8 no.4:163-167 165. (M.RA 18:9)

1. Moskovskiy institut stali i splavov.

Card 1/2

ENT(m)/ENP(w)/ENA(d)/T/ENP(t)/ENP(s)/ENP(b)/ENA(c)ACC NR: AP5027713 SOURCE CODE: UR/0129/65/000/011/0041/0042 Belyakova, A. F.; Paisov, I. V.; Kryakovskiy, Yu. V.; Tatarintsev, V. AUTHOR: ORG: Hoscow Institute of Steel and Alloys (Moskovskiy institut stell i splayov) TITLE: Causes of the high impact strength of steels containing ware-earth metals SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 11, 1965, 41-42, and bottom half of insert facing p. 41 TOPIC TAGS: rare earth metal, steel, metal grain boundary contamination, electron microscopy, nonmetallic inclusion / EM-5 electron microscope ABSTRACT: As recently established (A. F. Bolyakova et al., MiTOM, 1959, no.9), the addition of rare-earth elements (REM) such as ferrocerium to 40KhNHA/steel results in the substitution of the plastic sulfides of Fe and Mn with relatively nonplastic spheroidal REM inclusions, i.e. with sulfides and oxysulfides of Ce. It is believed that REM decontaminate grain boundaries and that this is one of the reasons for their favorable effect on the properties of steel. To verify this, the authors performed an electronmicroscopic examination of the structure and properties of 40KhRA steel alloyed with small amounts of REM. Following impact tests of the specimens, which revealed an increase of as much as 6.6 kg-m/cm2 in impact strength, sections of the specimens were etched to reveal the grain boundaries and processed into replicas UDC: 620.178.167:620.187.2:699.85/26

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L 9635-66

ACC NR: AP5027713

which then were examined with the aid of an EM-5 electron microscope (magnification 10,000 times). The findings were processed by selecting the boundaries separating ferrite grain, since the boundaries between ferrite and pearlite grains represented continuous chains of carbides oriented along the boundaries, and calculating the number of each of the following types of examined boundaries: completely pure boundaries and the boundaries containing 2-3, 4-7, 8-12, and >12 inclusions (nonmetallic inclusions, intermetallides, carbides) over a 15 µ long boundary section, and then determining their percentile ratio to the total number of the ferrite boundaries examined. On this basis it was established that the grain boundaries' in steel containing REM are actually more contaminated than in REM-free steel. Hence, REM in reality do not decontaminate the grain boundaries. It was also found, however, that in REM-containing steel most segregations at grain boundaries are spheroidal, as opposed to their rectangle and square shapes in REM-free steel. The spheroidal segregations presumably represent the oxides and oxysulfides of REM and apparently are one of the reasons for the higher impact strength of REM-containing steel. The nature of these segregations should be a subject of further investigations. Orig. art. has: 3 figures.

SUB CODE: 11, 13/ SUBH DATE: none/ ORIG REF: 005/ OTH REF: 000

Card 2/2

BELYAKOVA, A.F.; KRYAKOVSKIY, Yu.V.; PAISOV, I.V.

Effect of rare-earth metals on the structure and properties of structural steel, Metalloved, i term.cbr.met. no.9:37-41 S 165.

(MIRA 18:10)

1. Moskovskiy institut stali i splavov.

BELYAKOVA, A.F.; PAISOV, I.V.; KRYCHOVSKIY, YL.V., TOTORINGER, T.YA.

Causes of a high impact toughness in steel containing races earth metals. Metalloved, i term, cor. met. no.11.41-42 N '65.

1. Moskovskiy institut stall i spisyov. (Miss 18:12)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826820007-8"

ENT(n)/ENA(d)/ENP(t)L 21021-66 IJP(c) HJW/JD/JG

ACCESSION NR: AP5022580

UR/0129/65/000/009/0037/0041 669.85/6.620.18:669.14.018

AUTHOR: Belyakova, A. F.; Kryakovakiy, Yu. V.; Paisov, I. V.

Effect of rare-earth metals on the structure and properties of machine TITLE: steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 9, 1965, 37-41, and insert facing p. 25 and top half of insert facing p. 40

TOPIC TAGS: rare earth metal, machine steel, toughness, nonmetallic inclusion,

ABSTRACT: The structure and properties of the machine steels 40KhNMA and 27 34KhNiMAR were investigated as a function of the addition of ferrocerium (0.6 and 2 kg/ton, respectively) to the ladle. Electronmicroscopic, fractographic, mechanical, and other tests of specimens cut out of the ingots revealed that in steels with r.e.m. (rare-earth elements) grain-boundary/tension is lower than in steels without r.e.m., and the boundaries are better-defined and less contaminated by impurities, since r.e.m. have a marked affinity with impurities and interact with

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L 21021-66

ACCESSION NR: AP5022580

them to form stable chemical compounds within the graip body, thus preventing the impurities from segregating out at the boundaries. Furthermore, the addition of r.e.m. to 40KhNMA steel enhances its impact toughness owing to the effect of r.e.m. on the form of normetallic impurities -- the transformation of threadlike (linear) sulfides into spheroidal inclusions with r.e.m. and the reduction in the proportion of large linear inclusions. In addition, r.e.m. delay the growth of austenite grains by causing the number of inclusions to increase while at the same time causing the size of the average inclusion to decrease. For the same reasons, r.e.m. reduce the hardenability of steel. Investigations of the effect of r.e.m. on hardness, electric resistance, amount of residual austenite, and impact toughness revealed that aside from the impact toughness of hardened steel at low and medium tempering temperatures, r.e.m. do not appreciably change these characteristics. Orig. art. has: 5 figures, 3 tables.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and

SUBMITTED: '00

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40206-66 ENT(m)/Enr(w)/I/ENr(t)/ETI IJF(c) ACC NRI AP6030051 SOURCE CODE: UR/0133/66/000/001/0072/0073 AUTHOR: Kul'kova, M. N.; Ponomareva, Ye. P.; Rubenchik, Yu. I.; Kryakovskiy, Yu. V.; Yavoyskiy, V. I. ORG: 'Krasnyy Oktyabr' Plant (Zavod "Krasnyy Oktyabr"); Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov) TITLE: Effect of rare earth metals on the properties of 12KhlMF steel SOURCE: Stal', no. 1, 1966, 72-73 7 TOPIC TAGS: steel, rare earth metal, steel macrostructure, mechanical property/ 12KhlMF steel ABSTRACT: The authors studied the nature and distribution of inclusions in 12KhlMF tube steel with and without additions of rare earth metals. Three methods were used for adding the rare earth metals to the melt: 1) in the furnace immediately before tapping (2-3 kg/t); 2) in the pouring ladle (0.2-1.0 kg/t); and 3) in the mold during terming (0.2-0.7 kg/t). Macrostructural analysis revealed that addition of rare earth elements by any method and in any quantity reduces local segregation of sulfur, talthough the degree of improvement is highly dependent on the method used for introducing the rare earth metals. For instance, additions of 3 kg/t to the furnace gives about the same effect as addition of 0.7-0.8 kg/t to the ladle. Additions of less than 3 kg/t to the furnace or less than 0.2-0.5 kg/t to the ladle have practically no effect on macrosturcture. Direct introduction of rare earth metals during teeming has a more noticeable Card 1/2 UDC: 559.18:658.562

| 0.5-0.6 kg/t. changed by rare of additive int | stribution of sulfur is changed co The mechanical properties of long earth treatment regardless of met roduced, while treated transverse mechanical properties, Orig. art | itudinal specimens were not thod of introduction or quantit specimens showed a considerabl | y |
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| SUB CODE: 11, | 20 / SUBM DATE: none / ORIG | REF: 002 | |
| Card 2/2 | | | · |

GLUSHCHENKO, P.M., inzh.; KRYAKOVISEV, G.F., master-vzryvnik (g. Kadiyevka, Donbass); BELINSKIY, I.; RUDENKO, I., rayonnyy gornotekhnicheskiy inspektor; OL'KHOVSKIY, A.

Readers letters. Bezop truda v prom. 7 no.4:3% Ap 163. (MIRA 16:4)

1. Biyskiy kotel'nyy zavod (for Glushchanko). 2. Glavnyy insh. shakhty im. Lutugina (for Belinskiy). 3. Obshchestvennyy inspektor okhrany truda, shakhta 18 bis, tresta Yemanshelimugol' (for Ol'khovskiy).

(Industrial safety)

KRYAKUNOV. N.A.

Single weight and multiple weight surveys in the orientation of deep mines. Gor.shur. no.3:45-50 Hr *55. (MIRA 8:7) (Mine surveying)

15-57-7-10315

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7, pp 246-247 (USSR)

Kryakunov, N. A. AUTHOR:

Orientation in Mine Surveying (Analiz materialov

proizvodstvennykh oriyentirovok) TITLE:

Sb. nauch. tr. Kazakhsk. gorno-metallaurg. in-t, PERIODICAL:

1956, Nr 14, pp 347-360

Data of 211 bearing determinations in mine surveying ABSTRACT:

were analyzed. Of these, 115 were of two-wire type, 49 were successive, and 47 were individual determinations. Data are given on the distribution of bearing determination along the depth of the mine, on the size of plumb bob, on the diameter of the wire and on the elements of triangulation. The material assembled was used to show the effect of a number of factors on the results of bearing determination and to determine the

Card 1/2

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826820007-8

15-57-7-10315

Orientation in Mine Surveying (Cont.)

accuracy of connecting surveys carried through one or two vertical shafts. The following conclusions were drawn: 1) The error of bearing determination in a mine through one shaft with two-wire system is equal to ½ 1 min 38 sec. No marked increase in error with depth of shaft was revealed. Increase in the rate of air movement in the shaft does not cause a marked increase in error of determinations. Two-wire system of bearing determination did not indicate the presence of a helical movement of air in the mine shafts. 2) The error in bearing determination with the use of two shafts, evaluated from the difference between two repeated determinations proved to be ½ 1 min 49 sec. The reason for the lack of advantage in bearing determination with the use of two shafts is that it is ordinarily impossible to establish closed polygons of suitable form in underground operations.

V. F. Kvasnikov

KRYAKUHOV, N.A., kandidat tekhnicheskikh nauk.

Plumb line behavior in mines. [Trudy] VNIMI no.30:154-194 '56.
(MLRA 9:11)

(Mine surveying) (Plumb-line deflections)

KUZNETSOV, I.A.; KRYAKUNOV, N.A., dotsent

Determining the closure error for plumb bobs by an experimental method. Sbor. nauch. trud. Kaz GMI no.19:71-78 '60. (MIRA 15:3) (Triangulation)

OMAROV, T.; KRYAKUNOV, N.A., dotsent

Using a support for automatic centering of a theodolite in an arbitrary center of a wall mark. Sbor. nauch. trud. Kaz GMI no.19: 82-85 *60. (MIRA 15:3)

(Mine surveying)

SERCL, Miroslav; JECHOVA, Dagmar; KOMRSKA, Milan; KOVARIK, Jaromir; KRYAL, Vlantimil; LICHA, Helena; LICHY, Josef; NETTL, Sasa; SIMKOVA, Dagmar; STOVICEK, Jaroslav; VRCHA, Lubomir; ZDRAHAL, Leopold; TUSL, Miloslav; SVORCOVA, Stepanka; K.UT, Vlastislav

On the effect of 1-centimeter electromagnetic waves on the nervous system in man (radar). Sborn. ved. prac. lek. fak. Karlov. univ. (Hrad Kral) 4 no.4:427-440 '61.

1. Neurologicka klinika; prednosta prof. DrSc. MUDr. M. Sercl Katedra obecne hygieny; prednosta prof. MUDr. V. Dvorak. (RADAR) (NEKVOUS SYSTEM physiol)

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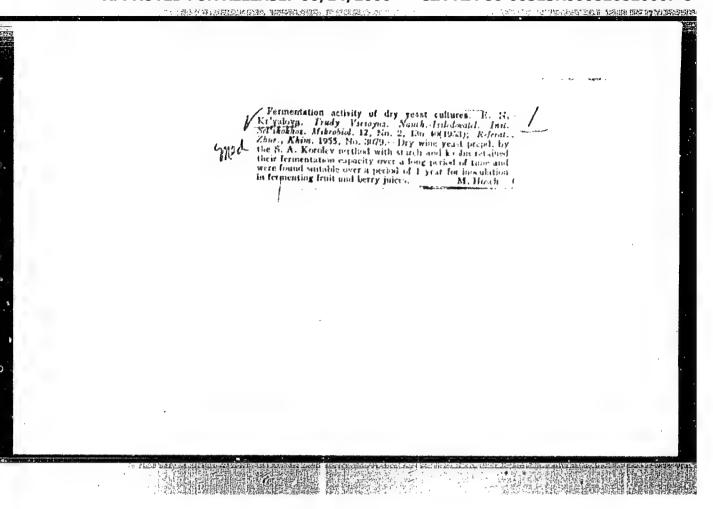
ZH"ALOVA, B.N.

On the article by V.I. Kudryavteeva "On the uninterrupted selection of microorganisms from the production."

Mikrobiologiya. Vol. 21. P. 32. 1952.

"APPROVED FOR RELEASE: 06/14/2000

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VALUADIC initiative. Hauka 1 shisn' 25 no.2158 F '58. (MIRA 1113)

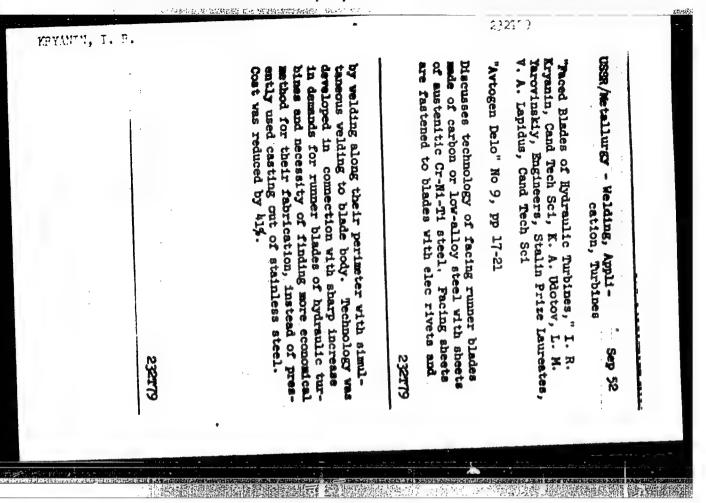
1. Institut filosofii AN SSER. (Atheism)

Weeless attempts. Nauka i shisn' 25 no.7:52-55 Ji '58. (Religion) (MIRA 11:9)

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| Tec | chnology | |
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KRYAHIN, I.R.; LYASS, A.M.; YAKOVLEV, V.O.; DUBROVSKIY, A.M.

া পাদ্যান্ত্রকার্যান্ত্রা বিশ্বরা (ক্রান্ত্রকার্

Casting blades of hydroturbines of the Thymlyansk and Gor'kiy hydroelectric power stations. Lit.proisv. no.6:2-7 Je '53. (MLRA 6:7) (Blades)

KRYANIN, I.R., kandidat tekhnicheskikh nauk; GOROZHANKIN, A.N., inshener.

Apparatus for the thermal treatment of thin elongated products. Makh.trud. rab. 7 no.9:46-47 S *53. (MLRA 6:9) (Metals-Heat treatment)

Testing the material of hydroturbine blades. Vest.mash. 33 no.11:41-49 (MIRA 5:12) (Blades)

KRYANIN, I. R.

USSR/Miscellaneous-Metallurgy

Card 1/1

Authors

: Kryanin, I. R., and Babushkina, G. I.

Title

: Low-alloy steel for faced hydroturbine blades

Periodical: Lit. Proizv. 1, 2 - 5, Jan-Feb 1954

Abstract

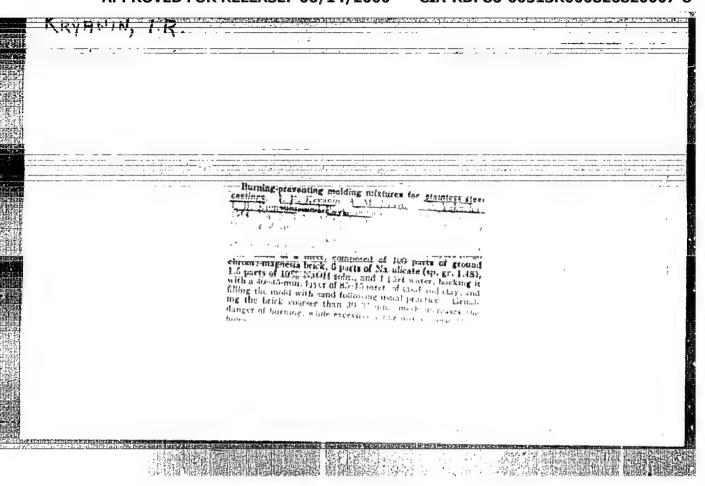
: Casting blades for large hydro-turbines must have high mechanical and anti-cerrosien properties and good resistance to cavitational wear. The low alloy steel 20 GS-L (silico-manganese steel centaining 0.16 - 0.22 carbon, 0.6 - 0.8 silicon and 1.0 - 1.3% manganese). because of its satisfactory technical and mechanical preperties, is most recommended for the manufacture of hydroturbine blades. Laberatory and industrial tests confirmed the suitability of the 20 GS-1 steel for the above intended purpose. Feur references. Tables.

graphs, drawings.

Institution: :...

Submitted :

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"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000826820007-8

KRYANIN, I.R., laureat Stalinskoy premii, kandidat tekhnicheskikh nauk;
LAPIDUS, V.A., kandidat tekhnicheskikh nauk; SAFRAZBKKYAN, O.S.,
inshener, laureat Stalinskoy premii.

Lining the runners of hydroturbines and preliminary results of
their operation. Vest.mash.34 no.1:48-51 Ja '54. (NURA 7:2)
(Water whoels)

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000826820007-8

"Low Alloy Steel for Lorge Costings." From the book, "Heat Treatment and Properties of Cast Steel." edited by N. S. Kreshchanovskiy, Mashgiz, Moscow 1955.

KRYAHIN, I. R., and BABUSHKINA, G. I.

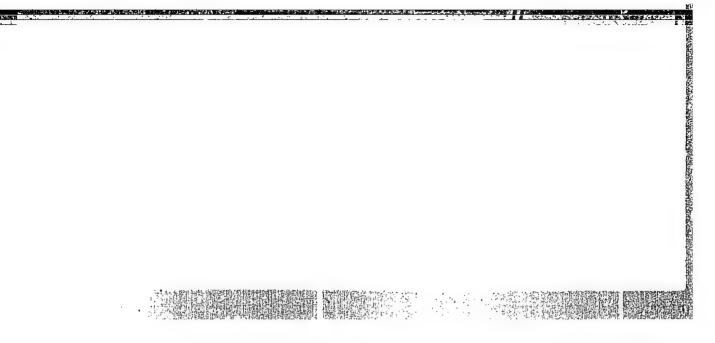
"Heat-Treating Castings of Chromium Steinless Steel." From the book, "Heat Treatment and Properties of Cast Steel." edited by N. S. Kreshchanovskiy, Moshgiz, Moscov 1955.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826820007-8"

KRYANIN, I. R.: "Frinciples for the selection and development of materials for the blades of high-power hydroturbines". Moscow, 1955. Acad Sci USSR, Inst of Metallurgy imeni A. A. Baykov. (Dissertation for the Degree of Doctor of Technical Sciences)

SO: Knizhnaya Letopis', No. 40, 1 Oct 55

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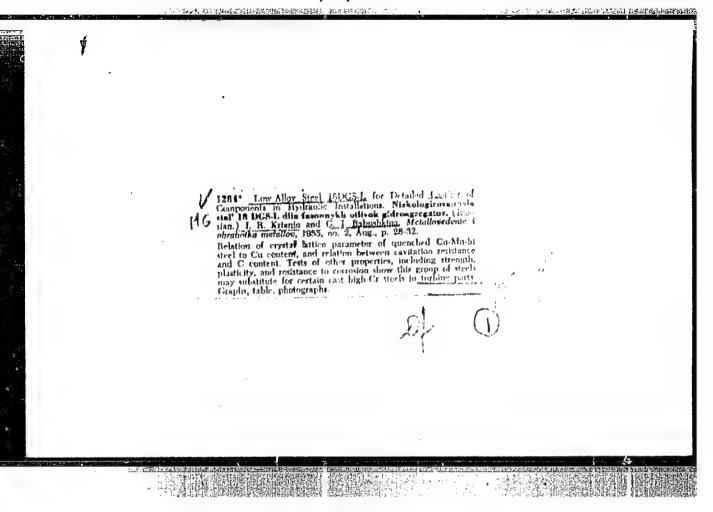


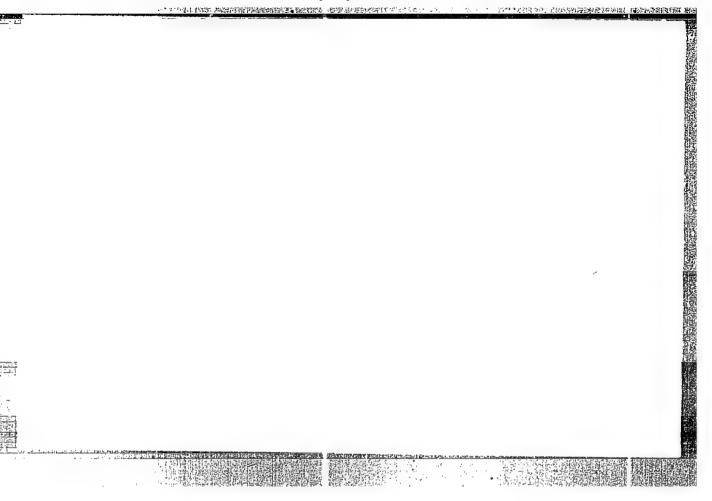
KRYANNIN, I.K. KRYANIN, I.R., DUEROVSKIY, A.M.

New casting method for turbine blades to be used at the Kuibyshev Water Power Plant. Idt.proizv. no.1:5-8 Ja 155. (MIRA 8:3) (Blades) (Steel casting)

"APPROVED FOR RELEASE: 06/14/2000

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KRYANIN, I.R., kandidat tekhnicheskikh nauk

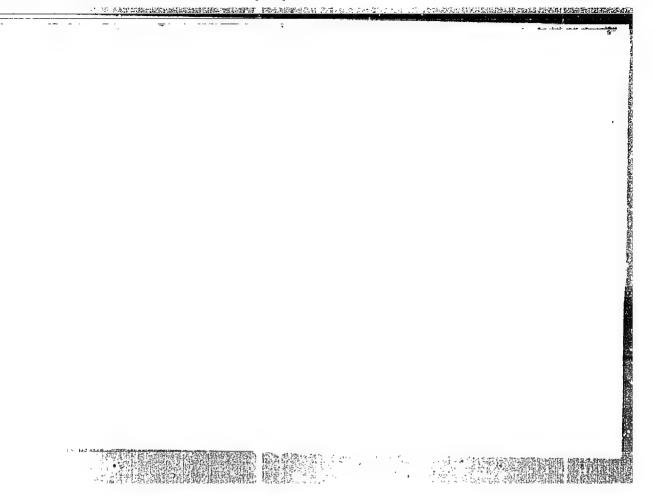
\$3. [7]: "完全上你们是连路大量大学是上班位。" \$2.50 (\$10)(2) (\$

High-strength cast steel of good welding quality. Svar. proisv. no.7: 7-9 J1 155. (MIRA 8:9)

1. TSentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya. (Steel--Welding)

KRYANIN I.R., kandidat tekhnicheskikh nauk; TIMERBULATOV, M.G., kandidat tekhnicheskikh nauk; BABUSHXINA, G.I., inzhener.

Investigating the cavitation resistance of steels used for hydroturbine blades. [Trudy] TSNIITMASH no.77:147-158 '55.(MLRA 9:7) (Blades--Testing) (Cavitation)



"你们一个好生的是一种含的相比较级的一些是一些女人看得

IVANOV, V.G., kandidat tekhnicheskikh nauk: KRYANIN, I.R., kandidat tekhnicheskikh nauk; LADYSHENSKIY, B.N., kandidat tekhnicheskikh nauk.

Overheating of lew Bessemer steel. Lit.proisv. no.4:31-32 Ap 156. (Bessemer process) (MLRA 9:7)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826820007-8"

ERYANIN I.R. kandidat tekhnicheskikh nauk; LAPIDUS, V.A., kandidat tekhnicheskikh nauk.

Coating runner chambers in high-power hydraulic turbines.

Energomashinostroenie nc.8:22-24 Ag 156. (MLRA 9:10)

(Hydraulic turbines) (Hard facing)

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KRYANIN, I.R.

Cavitation erosion of turbine blades. Metalloved. i obr. met. no.12:9-11 D '56. (MEA 10:2)

1. TSentral'nyy nauchno-issledovatel'skiy institut tyashelogo mashinostroyeniya.

(Cavitation) (Blades)

KRYANIN, EN.

PHASE I BOOK EXPLOITATION

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- Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i Mashinostroyeniya.
- Vyplavka stali dlya fasonnogo lit'ya (Making of Steel for Shaped Castings) Moscow, Mashgiz, 1957. 142 p. (Its: [Trudy] kn. 86) 3,600 copies printed.
- Ed.: Kryainin, I. R., Candidate of Tech. Sciences; Tech. Ed.: El'kind, V. D., Managing Ed. for literature on heavy machine building (Mashgiz): Golovin, S. Ya.
- PURPOSE: This collection of articles is intended for workers in various branches of the machine-building industry. It may also be used by metallurgical research institutions and by students of the technology of steel production.
- COVERAGE: The articles in this collection describe the experimental work done by the Tsentral'nyy Nauchno-Issledovatel'skiy Institut Tekhnologii i Mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Building) in developing new melting and casting methods for various

322

carbon and alloy steels to be used in the manufacture of hollowshaped forgings. Experiments with various furnaces, in particular with the combined Bessemer basic-electric furnace, are described and evaluated in detail. There are 47 references, 37 of which are Soviet, 6 German, 1 French, and 3 English.

TABLE OF

CONTENTS: Foreword

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Iodkovskiy, S. A., Engineer. Making LA-1 Heatresistant Austenitic Steel for Shaped Castings

5

The preparation of LA-1 steel, used for gas turbine parts operating at 600°C., and its properties are described. Electric furnaces.using semi-acid slag are claimed to be most suitable for the production of this kind of steel. There are no references.

Tvanov, V. G., Candidate of Technical Sciences. Behavior of Sulfur and Phosphorus in a Converter Process

Card 2/5

21

322

The author describes experiments dealing with the removal of S and Ph in a side blown Bessemer process. It is said that the amount of S can be reduced by 24.2% and the amount of Ph can be reduced by 24.5%. The temperature of the molten pig iron and the water content of the blown air are claimed to be important factors in this process. There are 5 Soviet references.

Ivanov, V. G., Candidate of Technical Sciences. Study of a Combination Method of Steel Making.

Easy removal of Ph and S from converter steel in an electric furnace permits the use of all types of scrap irrespective of Ph and S content. The greater speed and efficiency of the electric furnace makes it suitable for pouring on a conveyor belt. There are 10 references, 8 Soviet and 2 German.

Gorozhankin, A. N., Candidate of Technical Sciences, Bashmakov, A. D., Engineer. Problems of Steel Making in a Uniflow Furnace of Limited Capacity

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The authors stress the need for a furnace of limited capacity in steel foundries. For this purpose an experimental furance was developed with a capacity of up to 1 ton. This furnace is said to be slow in reaching operational temperatures; there is also a loss of heat due to the small amount of metal in each charge. Ph and Mg impurities also present a problem. This furnace needs further development and de-bugging before it can be employed on industrial scale. There are 6 references, 5 Soviet, 1 English.

Kraskovskiy, S. V., Candidate of Technical Sciences. Decarbonization and Dephosphorization of Steel by Means of Air- Oxygen Mixtures

To speed up the production of steel it is necessary to improve the process of decarbonization and dephosphorization of steel. Oxygen-enriched air with powdered limestone was blown into the bath of an electric furnace. The author claims that this method is quicker, eliminates the use of iron ore, and produces steel of good quality.

Card 4/5

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322

The equipment required is said to be simple and expensive. There are no references.

Novitskiy, V. K., Candidate of Technical Sciences. Study of Casting Methods and Structure of Hollow Steel Castings

107

The author states that the quality of hollow castings is often unsatisfactory. Slow crystallization is said to present many problems. The experiments deal with the various cores for hollow castings. It was experimentally determined that cores made of thin-walled steel tubes with a cooling arrangement give the best results. There are 16 references, 14 Soviet, 2 English.

AVAILABLE: Library of Congress

Card 5/5

GO/vm June 3, 1958

SUPPLIES THE PROPERTY OF THE P KRYANIN, I.R.

129-11-4/7

AUTHOR: Kryanin, I.R., Candidate of Technical Science ..

Scientific Achievements of TBNIITMASh in the Field of TITLE:

Materials and Engineering Technology. (Nauchnyye dostizheniya TswilTMASh v colasti materialov i tekhnologii

mashinostroyeniya).

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1957, No.11, pp. 56-65 (USSR)

ABSTRACT: In the field of developing heat resistant materials TsNIITMASh works in co-operation with all the major industrial undertakings, i.e. The Leningrad Metallurgical works imeni Stalin (Leningradskiy Metallicheskiy imeni Works imeni Stalin (Leningradskiy Metallicheskiy imeni Stalina), the Kharkov Turbine Works imeni Kirov (Khar'kovskiy Turbinny imeni Kirova), the Nevsk Works imeni Lenin (Nevskiy imeni Lenina) etc.; they also co-operate with the Central Boiler-Turbine Institute imeni Polzunov (Institut Turbinalinia Katloturbinnia imeni Polzunova) the Central Tsentral'niy Kotloturbinniy imeni Polzunova), the Central Ferrous Metallurgy Scientific Research Institute (Tsentralniy Nauchno-Issledovatel skiy Institut Chernoy (Metallurgii) etc. On the basis of the obtained results and theoretical assumptions, the Institute has recommended a new heat resistant steel for gas and steam turbines and Card 1/4 for boilers. For instance, for castings of large rating

129-11-4/7

Scientific Achievements of TsNIITMASh in the Field of Materials and Engineering Technology.

steam turbines operating at 540°C they recommended the use of Cr-Mo-V steel 20xm4-1 and the electrodes U1 -20 for welding this steel and during recent years this steel has werding this steel and during recent years this steel has been widely applied in the Soviet Union. For operation under relaxation conditions at 550°C TBNIITMASh developed and recommended the pearlitic steel 3N 723 which proved technologically very favourable and cheap. For cast components of turbines operating at 570°C the Cr-Mo-V steel 15X1M1 - N was developed and introduced. Furthermore, the Cr-Mi-Co cteel 10A large introduced for each components. the Cr-Ni-Co steel MA-1 was introduced for cast components of steam and stationary gas turbines operating at temperatures up to 650°C. A number of steels have been developed for hydraulic turbines and for casting large blades for hydraulic turbines. TSNIITMASH in co-operation with NKMZ have developed a new technology and mechanized equipment for moulding the blades and also moulding materials. As a result of these new techniques a tenfold increase in the manufacturing capacity of such blades was achieved. Fig. 2, p.58, shows a photo of the blade (steel 20 Cc-1)

Card 2/4 of the turbines of the Kuybyshev hydraulic power station.

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Scientific Achievements of TaNIITMASh in the Field of Materials and Engineering Technology.

This Institute, in co-operation with LMZ, also developed a new technology for manufacturing "one off ' components of hydraulic turbines by welding together individual sections produced by casting or forging. A fully forged shaft of a hydraulic turbine, the manufacture of which has to be effected from an ingot weighing 200 tons, can be substituted, by using this new technique, by a shaft forged from a hollow ingot or welded together from two sheets of 200 mm thickness to which cast flanges are welded on by the electric slag method. TsNIITMASh has also developed a number of high strength cast irons which should in future substitute cast steel for various applications. This Institute has developed an original method of microelectro-chemical investigation of structural corrosion under stress which permits studying the fundamental mechanism of corrosion cracking of metals subjected to mechanical stresses and located inside liquid corrosive media. The test methods and the test facilities available at TaniiTMASh are also dealt with in some detail. Figs.3-5 show various models of equipment for fatigue Card 3/4 testing of shafts and flat specimens; Fig. 6 shows a photo

129-11-4/7 Scientific Achievements of TsNIITMASh in the Field of Materials and Engineering Technology.

of a set-up for testing turbine blades at 700°C. TenlITMASh is doing a considerable amount of work in studying the stability in operation of new grades of steel directly on turbines of operating hydraulic power stations. It was found that the erosion stability of gas turbine blades can be appreciably increased by means of chemical surface hardening and experiments have also confirmed the possibility of using welded cylinder designs in medium power stationary gas turbines. The last paragraph deals with the work of this Institute in development of engineering technology applicable to the manufacture of a great variety of machinery and equipment, particularly relating to moulding and casting, shaping by applying pressure, automatic welding and heat treatment (using current of 50 c.p.s. and higher frequencies). The work of this Institute relating to increasing the wear resistance and the corrosion stability of equipment is also briefly mentioned. There are 10 figures.

ASSOCIATION: TENTITMASh.

AVAILABLE: Library of Congress

Card 4/4

ERYAHIN, I.R., kand.tekhn.nauk; VASILEVSKIY, P.F., kand.tekhn.nauk.

Development and outlook of the steel casting production for heavy machinery industry. Vest.mash 37 no.12:28-32 D *57. (MIRA 10:12) (Steel castings)

KRYANIN. IVAN ROMANOVICH

PHASE I BOOK TY COTTATION

551

Kryanin, Ivan Romanovich

Lopasti gidroturbin; kavitatsionnyye razrusheniya, 1zyskaniye i issledovaniye materialov (Hydraulic Turbine Blades; Destruction Due to Cavitation; Investigation and Development of Materials) Moscow, Mashgiz, 1958. 206 p. 2,200 copies princed.

Reviewer: Vedenkin, S.G., Professor; Ed.: Kulikov, F.V., Engineer; Tech. Ed.: El'kind, V.D.; Managing Ed. for general technical literature and literature on transport, highway and power machine building (Mashgiz): Ponomareva, K.A., Engineer.

PURPOSE: This book is intended for engineers and technical personnel working in machine manufacturing plants, hydraulic power plants, and in scientific research institutes dealing with the problems of hydraulic turbine construction. It may also be useful to students of higher technical institutes.

card 1/5

Hydraulic Turbine Blades (Cont.)

551

COVERAGE: This book deals with problems in the development and analysis of materials used for manufacturing powerful hydraulic turbine blades. The author states that the intensive growth of Soviet hydraulic turbine building has resulted in a demand for new materials and increased research in this field. The basic characteristics of turbine blade function and the cavitational erosion of materials are discussed in detail. The book contains research data on various types of steels and alloys used for hydraulic turbine blades. There are 124 references of which 102 are Soviet, 10 English, and 12 German.

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General aspects of the investigation and selection of blade materials

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LEVANDO, V. V., (Engr.) KRYANIN, I. R. (Cand. of Tech. Sci.)

"Structure and Properties of the Metal of Large Castings."

in book - Improving the Quality of Steel Castings; Transaction of the All-Union Kan St. Conference, Moscow, Mashgiz, 1958. 214 p.

THEXAMENTE Abstract: The authors investigate 2008L low-alloy manganese-silicon steel as a material for casting massive turbine bladdes. Such a blade was cast and analyzed to determine the degree of chemical homogeneity and also the microstructure, microstructure, mechanical properties, and hardness of various sections of the blade. It was found that this steel is very well suited for the casting of many types of machine parts where high strength and good plastic properties are required, and also for turbine, blades, provided the blade is surfaced with stainless steel to assure cavitation stability.

KRYANIN, Ivan Romanovich -- awarded sci degree of Doc Tech Sci for the 23 Ded 57 defense of dissertation: "Bases for the selection and investigation of materials for the blades of powerful hydroturbines" at the Council, Central Sci-Res Inst of Technology and Machine-Constr; Prot No 14, 31 May 58.

(BMVO, 11-58,19)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826820007-8"

ERYANIN, I.R., doktor tekhn.nauk prof.

Cavitation fracture and testing of material for the blades of hydraulio turbines. [Trudy] TSNIITMASH 1001273-292 (MIRA 13:7)

159. (Hydraulio turbines-Blades)

BABUSHKINA, G.I., insh.; KEYANIN, I.R., doktor tekhn.nauk, prof.; TIMERBUIATOV, M.G., kand.tekhn.nauk

Resistance of steel to cavitation fracture depending on the homogeneity of structure and mechanical features. [Trudy] TSNIITMASH 100:293-310 159. (MIRA 13:7) (Hydraulic turbines-Corrosion)

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S/114/60/000/010/005/007 E194/E484

26.2120 AUTHORS:

Kryanin, I.R., Doctor of Technical Sciences and Dabushkina, G.I., Engineer

TITLE:

Corrosive and Abrasive Wear of Metals in Water Turbines

PERIODICAL: Energomashinostroyeniye, 1960, No. 10, pp. 33-35

Water turbine parts exposed to the action of water TEXT: sometimes get very severely worn by solid particles in the water. This is particularly likely to occur if the power stations have no settling ponds as may happen on the mountain rivers of Central Asia In some cases, turbine parts have required and the Caucasus. major overhaul or replacement after one year of use. heavily worn parts are usually those which change the direction of the water. In radial-axial turbines, the runner is most subject to damage particularly the lower rim. Fig.1 shows a runner made of steel grade 30G-L after 1 year's operation at the Shaarikhansk Power Station and it will be seen that wear is catastrophic. A runner made by an English firm of stainless steel with 12% chromium experienced similar wear. Fig. 2 shows a runner after 2 years' operation; it was heavily worn, further details of the damage are illustrated in Fig. 3, 4 and 5. The difference Card 1/3

83302

S/114/60/000/010/005/007 E194/E484

Corrosive and Abrasive Wear of Metals in Water Turbines

between wear by corrosive abrasion and cavitation is illustrated The main properties of metal that influence its in Fig.6. resistance to corrosive abrasion are its micro-structure and Some design changes should be made in turbine runners for such conditions to reduce the rate of flow. The grades of steel used should have high resistance to abrasion. should be made of carbon or low alloy steels and surface treated with special electrodes at points of potential damage. runners made of different materials offer advantages. cases, it may be advisable to use replaceable facings of the inner surfaces made with high alloy steels. The best method of repair is by welding with special electrodes. Since 1956, TsNIITMASh has been making laboratory tests which show that a most promising grade of steel is austenite-ferrite (chrome-nickelmanganese-copper) steel 1Kh18N3G3D2-L. This metal has been used for runner repairs and after running for 10000 hours was found to have a better resistance to corrosive abrasion than high alloy steels (austenitic 1Kh18N9T and very hard chrome-copper 1Kh13ND-L).

Card 2/3

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Corrosive and Abrasive Wear of Metals in Water Turbines

To accumulate experience with this grade of stee, the Neva Engineering Works and the Leningrad Metal Works anufactured a cast runner illustrated in Fig.7. This runner as been in operation since 1959. Test results with other grades of steel will be described in a further article. There are 7 figures.

H

Card 3/3

BABUSHKINA, G.I., insh.; KRYANIN, I.R., doktor tekhn.nauk, prof.;
IAPIDUS, V.A., kand.tekhn.nauk

Copper steel for the blades of large hydraulic turbines.

[Trudy] TSHIIMASH 100;311-346 ** 159. (MIRA 13:7)

(Copper steel) (Hydraulic turbines—Blades)

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GOROZHANKIN, A.N., kand.tekhn.nauk; NOVITSKIY, V.K., kand.tekhn.nauk;

KRYANIN, I.R., doktor tekhn.nauk; IODKOVSKIY, S.A., kand.tekhn.

nauk; LADYZHENSKIY, B.N., kand.tekhn.nauk; MIL'MAN, B.S., kand.tekhn.

nauk; KIOCHNEY, N.I., kand.tekhn.nauk; TSYPIN, I.O., kand.tekhn.

nauk; LEVIN, M.M., kand.tekhn.nauk; BALDOV, A.L., inzh.; LYASS,

A.M., kand.tekhn.nauk; CHERNYAK, B.Z., kand.tekhn.nauk; ASTAF'YEV,

A.A., kand.tekhn.nauk; YERMAKOV, K.A., inzh.; GRIBOYEDOV, Yu.N.,

kand.tekhn.nauk; MYASOYEDOV, A.N., inzh.; BOGATYREV, Yu.M., kand.

tekhn.nauk; UNKSOV, Ye.p., doktor.tekhn.nauk, prof.; SHOFMAN, L.A.,

kand.tekhn.nauk; PERLIN, P.I., inzh.; MOSHNIN, Fe.N., kand.tekhn.

nauk; PROZOROV, L.V., doktor tekhn.nauk; CHERNOVA, Z.I., tekhn.

[Some technological problems in the manufacture of heavy machinery]
Mekotorye vorrowy tekhnologii tiashelogo mashinostroeniia. Meskva,
Gos.nauchno-tekhn.isd-vo mashinostroit. lit-ry. Part Ti[Steel smelting and casting; founding; heat treatment; shaping metels by pressure] Vyplavka i raslivka-stali; liteinos proizvolstvo, termicheakaia obrabotka, obrabotka metallov davleniem. 1960. 266 p. (Moscow.
TSentral'myi nauchno-issledovatel'skii institut tekhnologii i mashinostroeniia. [Trudy] no. 98).

(Steel) (Founding) (Forging)

KRYANIN, I.R., doktor tekhn.nauk; DUBROYSKIY, A.M., inzh.

Studying and developing new techniques for casting powerful hydraulic turbine blades. [Trudy] TSNIITMASH 97:183-208 '60. (MIRA 13:8)

(Founding)

(Hydraulic turbines--Blades)

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: EROHTUA

12500

Pokatayev, S. V., Engineer, Movitskiy, V. K., Candidate of Technical

Sciences, Kryanin, I. R., Doctor of Technical Sciences

TITLE:

The effect of the steel melting method upon toughness in the weld-

adjacent zone during electric slag welding

PERIODICAL: Svarochnoye proizvodstvo, no. 1, 1963, 3 - 8

TEXT: Different values of toughness in weld-adjacent zones of steel from different heats depend on melting factors, such as deoxidation, content of sulfur, phosphorus and gas. The investigation was made with grade 20 FC (20GS) steel containing (in %): 0.16 - 0.22 C, 1.0 - 1.3 Mn, 0.6 - 0.8 Si, ≤ 0.030 S and P; ≤ 0.3 Cr, Ni and Cu. Specimens of steels from different heats were electric-slag welded at 850 - 900 amps current; 40 - 41 v arc voltage; 203 m/h electrode feed rate, and 1.2 m/h welding speed. The flux was DU-7 (FTs-7). The following results are presented. The melting process exerts a considerable effect upon the mechanical properties of 2003 steel. Free Al in amounts of 0.01% and less, reduces the toughness on account of ferrite brittleness and the

Card 1/3

The effect of the steel melting method upon...

S/135/63/000/001/001/016 A006/A101

singling out of sulfides in the form of films on the austenite grain boundaries. Ferrite brittleness is caused by an increased content of dissolved oxygen and nitrogen. Particularly high sulfide separation on the grain boundaries takes place at a sulfur content in the steel exceeding 0.02%. A low content of free Al and increased sulfur amounts reduce the metal toughness in the coarse grain range even to a higher degree. The causes are: coarse-grained structure, singling out of brittle excess ferrite along the boundaries of overheated grains, and the presence of sulfide inclusions in the ferrite edges along the grain boundaries. The negative effect of sulfur upon the toughness of 20GS steel in the weld joints increases strongly with a higher carbon content in the steel. The possibility was established of melting low alloy 2003 steel without a decrease in toughness in the superheated zone during electric slag melting. The basic conditions for producing such a steel are: melting with not over 0.02% S, deoxidation with 0.02 - 0.04% rated amount of free Al. It is recommended to use ferroaluminum for deoxidation taking into account Al losses during its introduction into the ladle. The P content should be limited to 0.02%. The thermal cycle of the electric slag welding process was determined by S. S. Astaf'yev,

Card 2/3

The effect of the steel melting method upon...

S/135/63/000/001/001/016 A006/A101

A. I. Rymkevich, (TaNIITMASh), A. I. Pugin and V. A. Merkulov (IMET imeni Baykov). There are 10 figures and 2 tables.

ASSOCIATION: Tanlitmash

Card 3/3

。在10世紀12月1日開催日辰日本中国民使学的扩发。第11日初日日本市

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AFFTC/ASD JD/HM

ACCESSION NR: AP3000678

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59

ANTHOR: Kryanin, L. R. (Doctor of technical sciences, Professor); Mirkin, I. L. (Doctor of technical sciences, Professor); Trusov, L. P. (Candidate of technical sciences)

TITLE: Steel used in stationary steam power plants operating at high ultra-high pressures and temperatures

SOURCE: Teploenergetika, no. 6, 1963, 10-15

TOPIC TAGS: power plant, steam pipe, welding, steel type, 12KhlMF steel, 15KhlMlF steel, E1-756 steel

ABSTRACT: (A study of characteristics and manufacture of steels 12KhlMF, 15KhMIF, of and EI-756 (12KhlIV2MF) for use in 200-, 300-, 500-, and 800-Mut power plants operating at 170 abs. atm. and 570C or at 255 abs. atm. and 585C was made at Tsentral'ny"y nauchno-issledovatel'skiy institut technologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machinery). The limit of strength in forged and perforated pipes of steel 15KhlMIF, with a wall thickness of 45-85 mm was found to be 9-10 kg/Sq mm at 585C. It was 8-9 kg/Sq mm for welded pipe joints. The test of original and welded parts indicated a high plasticity.

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L 12894-63

ACCESSION NR: AP3000478

This perlite steel is recommended for production of steam pipes in 300-Mat plants operating at 5850 and 255 abs. atm. Table 1 (see enclosure) shows allowable and ultimate stresses for both steels at a temperature range of 520-600C. Electrode—TSL-34 is recommended for welding this material with a preheating temperature of 300-350C. The use of trick pipes made of steel 12KhlMF for the same power plants is not recommended because of the low limit of sustained strongth in this steel. Experiments on pipes of chromium-molybdenum-vanadium steel With additional ingredients will be finished in 1963. Martensite-ferrite steel EI-756 and electrodes TaL-32 are recommended for pipes in power plants operating at 585-630C. Pisectional induction coils of both rigid and flexible types are recommended for local heating in welding straight and curved pipes. Orig. art. has: 7 figures and 4 tables.

ASSOCIATION: TENIITMASh

SUBMITTED: 00

DATE ACQ: 21Jun63

SUB CODE: 00

NO REF SOV: 003

OTHER: 000

Card 2/11

_KRYANIN, I.R., doktor tekhn.nauk, prof., red.; OSIPOVA, L.A., red.izd-va; SMIRHOVA, G.V., tekhn.red.

[Improving the quality of G13L steel castings] Povyshenie kachestva otlivok is stali G13L. 202 p. (Moscow. TSentral'nyi nauchnoissledovatel'skii institut tekhnologii i mashinostroeniia.
[Trudy], vol. 106).

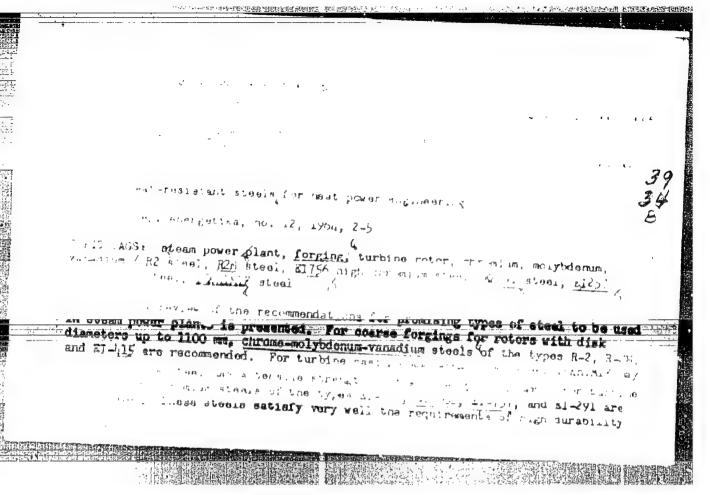
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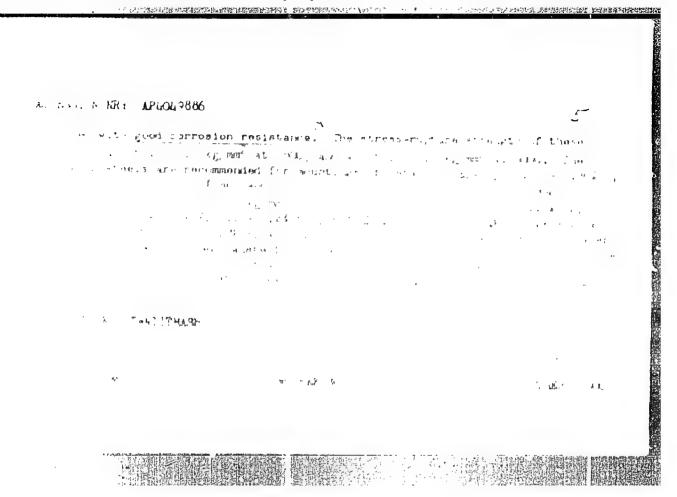
(Steel castings)

POKATAYEV, S.V., insh.; NOVITSKIY, V.K., kand. tekhn. nauk; KRYANIN, I.R., doktor tekhn. nauk

Effect of steelmaking conditions on the impact toughness at low temperatures of electric slag welded joints. Syar. proizv. no.6:22-26 Je '63. (MIRA 16:12)

1. TSentral'nyy nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.





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CIA-RDP86-00513R000826820007-8

L 01926-67 ENT(m)/T/ENP(w)/EWP(t)/ETT IJP(c) WB/JD

ACC NR. AR6031846 SOURCE CODE: UR/0285/66/000/006/0023/0023

AUTHOR: Kryanin, I. R.

TITLE: Studies in the resistance to cavitation and abrasion-corrosion of materials used in the construction of hydroturbines

SOURCE: Ref. zh. Turbostroyeniye, Abs. 6.49.127

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REF SOURCE: Sb. Kavitats. 1 gidroabrazivn. stoykost' met. v gidroturbinakh. M., Mashinostroyeniye, 1965, 3-9

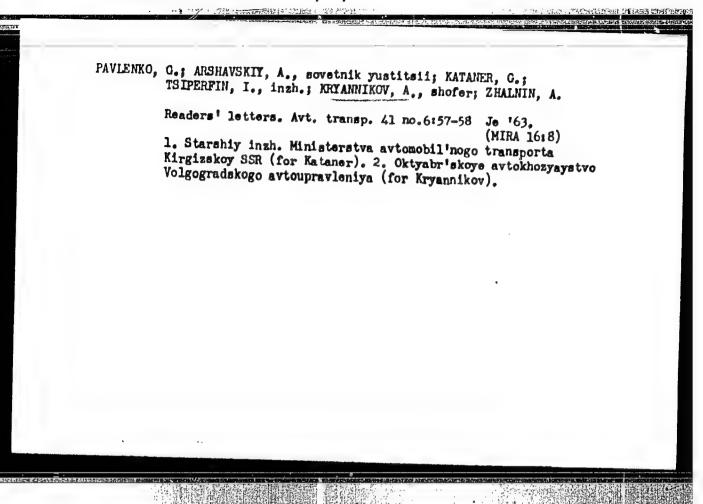
TOPIC TAGS: cavitation, corrosion resistance, turbine, hydraulic turbine, cavitation resistance, abrasion, abrasion resistance, metal casting

ABSTRACT: An enumeration is made of the studies conducted by the Central Scientific Research Institute of Machine Technology (TsNIITMASh) in conjunction with the Leningrad Metals Plant (LMZ), the Khar'kov Turbine Plant imeni S. M. Kirov (KhTGZ), and the Nevskiy, Novo-Kramatorskiy, and Elektrostal' machine-building plants on materials, casting and surfacing techniques, and the mechanism of failure

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UDC: 621, 224, 001, 5

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KRYAT, P. I.

Machinery developed by the Ukrainian Research Institute of Agricultural Machinery and Equipment. Trakt.i sel'khoznash. no.8: 25-27 Ag '59. (MIRA 12:11)

1. Direktor Ukrainskogo nauchno-issledovatel'skogo instituta sel'sko-khosyaystvennogo mashinostroyeniya (UkrHIISKhOH). (Ukrains--Agricultural machinery)

KRYAT, P. I., inzh., IVANCHERKO, I.P., inzh.

Developing agricultural machinery for sugar beet growing. Trakt. 1 sel'khozmash. 30 no.8:22-24 Ag '60. (MIRA 13:8)

1. Ukrainskiy nauchno-issledovatel skiy institut sel skokhosyayetvennogo mashinostroyeniya. (Agricultural machinery) (Sugar beets)

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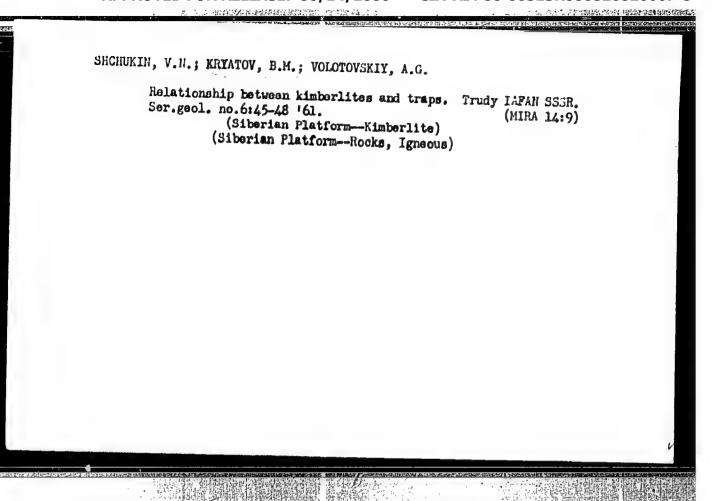
Excerpta Medica 1/2 sec 17 Feb 55 Pub. Health, Social Medicine & et 846. KRYATCHKO I. A. *Physical culture and disease prevention (Russian Text) SOVETSK. ZDRAVOOKH. 1954, 2 (16-21)

BOBRIYEVICH, A.P.; KRYATOV, B.M.; SHCHUKIN, V.B.

Some data on the geology and petrography of 3therian kimberlites.

Trudy IAFAN SSSR. Ser.geol. no.6:24-36 '61. (MIRA 14:9)

(Daldyn Valley-Kimberlite)



"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000826820007-8

ACC NR. AP6022194 SOURCE CODE: UR/0026/66/000/006/0100/0105

AUTHOR: Kryatov, B. M.

38

ORG: none

TITLE: Diamonds of Yakutiya

SOURCE: Priroda, no. 6, 1966, 100-105

TOPIC TAGS: diamond, petroleum, gas, mining

ABSTRACT: The author reviews the history of diamond mining and the recent expansion of mining sites in Yakutiya. He descirbes kimberlite pipe formations and their geographic distribution, enumerates the various mineral inclusions. In kimberlite rock, and relates the supposed origin of their shape. Various theories on the origin and formation of diamonds are discussed. There are indications that diamonds can be produced by a shock wave during an explosion. It is supposed that hydrogen and acetylene gas can accumulate in the magnetic chamber and replace decaying methane and other hydrocarbons. Oxygen can penetrate from sedimentary rock as a result of decomposition of water and other hydrocarbons. Considerable amounts of CO and CO₂ will penetrate into the juvenile gas. This hypothesis makes

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Contact changes in kimberlites and englosing rocks of the "Zernitsa" pipe. Trudy IAFAN SSSR. Ser.geol. no.6164-66
161. (Daldyn Valley-Kimberlite)

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ACC NRI AP6009565

SOURCE CODE: UR/0236/65/000/003/0095/0101

AUTHOR: Dolgopol'skiv. I. H. -- Dolgopolskis, J.; Vayshtarene, K. V. -- Vaistariene, K.; Kryauchyunas, I. I. -- Kriauciunas, J.

ORG: Institute of Chemistry and Chemical Engineering, Academy of Sciences, Lithua- Raian SSR (Institut khimil i khimicheskoy tekhnologii Akademii nauk Litovskoy SSR)

TITLE: Synthesis of vinyl fluoride using a suspended catalyst

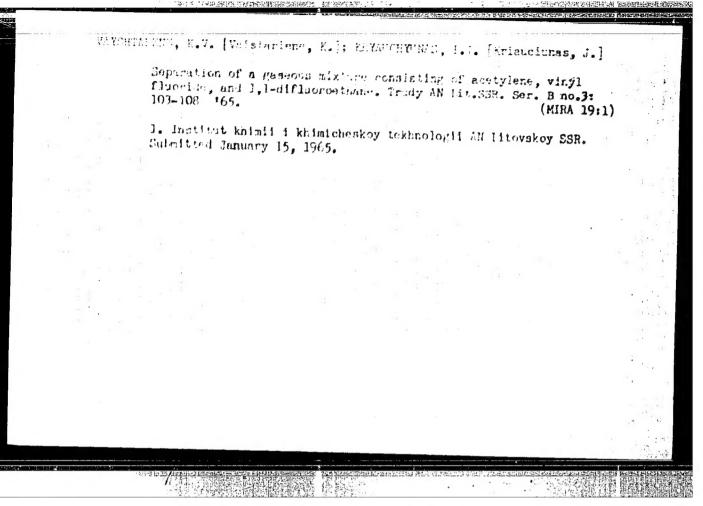
SOURCE: AN LitSSR. Trudy. Seriya B. Fiziko-matematicheskiye, khimicheskiye, geologicheskiye i tekhnicheskiye nauki, no. 3, 1965, 95-101

TOPIC TAGS: vinyl fluoride, acetylene, hydrogen fluoride

ABSTRACT: The reaction of hydrofluorination of acetylene in the presence of a suspended catalyst (suspension of mercuric oxide in vaseline oil) was investigated because the same reaction on a solid catalyst has many disadvantages. It was found possible to carry out a continuous and regular feeding of hydrogen fluoride by isothermally evaporating its mixture with acetylene; one liter of acetylene at 0°C carries off 2.98 g of hydrogen fluoride, i. e., the acetylene/HF ratio is 1:3.48. The conditions of vinyl fluoride synthesis were determined: the degree of conversion of acetylene and the reproducibility of the yield per unit weight of the catalyst reach their maximum at 50°C, at a 15% HgO concentration, and an acetylene feed rate of 6 1/hr. The

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Extensional of vinyl fluoride using a sumerist statement. Trudy AN

Lit.SSR. Ser. B no.3:95-101 165. (MEA 19:1)

1. Institut khisit 1 khisichenkey termologis Submitted February 20, 1965.
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